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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,993

05/05/2005

David J. Wortman

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06/12/2008

NOVAK DRUCE DELUCA + QUIGG LLP

1300 EYE STREET NW

SUITE 1000 WEST TOWER

WASHINGTON, DC 20005

EXAMINER

SPEER, TIMOTHY M

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

06/12/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/533,993	Applicant(s) WORTMAN ET AL.	
	Examiner TIMOTHY M. SPEER	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-71 is/are pending in the application.
- 4a) Of the above claim(s) 30-57 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 and 58-71 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-29 and 58-71, in the reply filed on 03/11/08 is acknowledged. The traversal is on the ground(s) that the present claims represent only to a process and an apparatus for carrying out the process. This is not found persuasive because the present claims are not drawn only to these categories. While claim 30 is directed to an apparatus, claims 58-71, for instance, are directed to a coated substrate.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4, 16, 17, 58, 61-65 and 70 are rejected under 35 U.S.C. 102(b) as being anticipated by Skelly (USPN 5,419,971).

4. Skelly teaches an enhanced thermal barrier coating (TBC) comprising a substrate, a bond coat formed on the substrate, and a coating formed on the bond coat, wherein the coating comprises zirconia. The zirconia may be deposited via thermal spraying or vapor deposition. The thermal barrier may be columnar and recesses may be formed in the substrate with the thermal barrier extending into the recesses thereby providing gaps between the grains. See Figure 2 and accompanying text.

5. Claims 1, 4, 58, 64, 65, 69 and 70 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Bruce (USPN 5,683,825).

6. Bruce teaches a TBC comprising a substrate, bond coat and thermal barrier layer thereon. The thermal barrier may comprise zirconia and may be deposited by APS or EBPVD.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2, 3, 5-15, 18-29, 59-60, 66-69 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Skelly (USPN 5,419,971) in view of Wadley (USPN 5,534,314).

9. Skelly teaches a TBC as discussed above, but fails to specify the manner in which the layers may be deposited. Wadley teaches a process for vapor depositing a coating on a substrate including directed vapor deposition. It would have been obvious to one having ordinary skill in the art to deposit the layers of Skelly via directed vapor deposition to gain the benefits of a continuous process, automation, reliability and decreased cost.

10. Claims 2, 3, 5-29, 59-61, 66-68, and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruce (USPN 5,683, 825) in view of Wadley (USPN 5,736,073).

11. Bruce teaches a thermal barrier system, as discussed above but does not specify the manner in which the layers may be deposited. Wadley teaches a process for vapor depositing a coating on a substrate including directed vapor deposition. It would have been obvious to one

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having ordinary skill in the art to deposit the layers of Skelly via directed vapor deposition to gain the benefits of a continuous process, automation, reliability and decreased cost.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY M. SPEER whose telephone number is (571)272-8385. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith D. Hendricks can be reached on 571-272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Timothy M. Speer/
Primary Examiner
Art Unit 1794